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The Great Earthquake

OF



JAPAN.


Tennant.

OCTOBER 28TH, 1891.



“Hyogo News” Co. Price 25 sen.





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JAPAN.

SHOWING AREA OF EARTHQUAKE DISTURBANCE.



1 Tokyo, 2 Yokohama. 3 Shizuoka. 4 Hamamatsu, 5 Nagoya, 6 Gifu, 7 Fukui, 8 Otsu, 9 Kyoto. 10 Osaka. 11 Kobe. Black spots show where severe shocks were felt. Half shaded. less severe. Towns not shaded. very slight.

The Great Earthquake

IN

Japan,

October 28th, 1891.



Being a full description of the disasters resulting from the recent terrible catastrophe, taken from the accounts in the "Hyogo News" by its Special Correspondent, and from other sources.



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311

PREFACE.



This account makes no pretensions to being scientific. It is simply a record of what I experienced in Kobe, and a description of the scenes witnessed in travelling over the districts where the most disastrous effects of the earthquake of October 28th, 1891, resulted.

H. TENNANT.

Kobe, 12th November, 1891.

INTRODUCTION.

EARTHQUAKES IN JAPAN.

Earthquakes are frequent in Japan, says J. J. Rein in his able and interesting work on this country. Such violent disturbances, he continues, fortunately occur but seldom, that is to say, according to previous experience and expectation, about one in every twenty years. The last destructive earthquake, however, took place in the autumn of 1855, so that already twenty-five years have elapsed without a recurrence, and the old rule apparently no longer holds. This was written in 1880, and although in that year a shock of considerable violence was felt it was not until the morning of the 28th Oct., 1891, that a seismic disturbance of any startling dimensions transpired. That, however, amply atoned for any delay, and by the extent of the area effected, and the terrific devastation wrought, maintained the reputation of Japan for being subject to such fearful visitations.

Japanese histories teem with incidents of the phenomena. There is a legend that in 286 B. C., Fujiyama was formed, as well as Lake Biwa, by one of these subterranean upheavals. The earliest authentic instance is that which occurred in 416 A.D., when the Imperial Palace at Kioto was thrown to the ground. Again in 599, the buildings throughout the province of Yamato were all destroyed, and special prayers were ordered to be offered up to the deity of earthquakes. In 679 a tremendous shock caused many fissures, or chasms, to open in the province of Chikuzen and Chikugo, in Kiushiu; the largest of these fissures being four miles in length and 20 ft. in width. In 685 a terrible disturbance occurred. Mountains were toppled over, rivers overflowed

and tremendous destruction resulted. In the province of Tosa an area of five million tsubo sunk into the sea. In 844 the province of Higo was devastated, 570 villages disappearing, and 280 mountain slips being recorded, the loss of life being immense. In 745 the ground rocked continuously for two days and three nights in succession. Mino province, then as now, suffering terrible disasters. Fifty-two years later Kioto, which has been frequently a sufferer, was almost annihilated, while in 818 the fatalities in Sagami, Musashi, Shimosa, Hitachi, Kotsuke, and Shimotsuke were so numerous that the Government had to bury the corpses. The year 827 is also noted for a mighty earthquake. The first strong shock did great damage, but it was two days later, when the most awful disturbance followed. Violent earthquakes also occurred in 830 and 841, while in the years 850, 856, 857, 864, and 868 ill-fated Kioto suffered severely. Sometimes these shocks were accompanied by sea-floods, one of these in 869 drowning 1,000 persons in Oshiu.

More recently in 1702 the loft-walls of the outside and inside moats of the castle of Yedo were destroyed, tidal waves broke along the coast in the vicinity, and the road leading through the famous pass of Hakone, was closed up by the alteration in the surface of the earth.

Indeed Tokio has constantly been victimized, and fire in nearly every instance has supplemented the catastrophe. In 1703 such a calamity happened costing it is estimated the lives altogether of 200,000 persons, and laying the capital in ruins. Echizen was decimated in 1726, and in 1751 Kioto, and Echigo were terribly affected, 16,000 people being killed. These instances by no means exhaust the catalogue. In 1782, Kwanto was badly shaken and in 1783 the eruption of Asama-yama was followed by violent earthquakes, the eruption of Onzenga-take in 1792, being succeeded by similar phenomena. Coming to the early days of the

present century Dewa was the theatre of repeated concussions in 1804, and in 1822 150 shocks were felt in Edo in the course of three days. Once more in 1828 an earthquake occurred in Echigo, and 30,000 men, women and children were destroyed. Two years later Kioto was again afflicted. The Tokugawa palace, Nijo, was among the buildings overthrown while the number of people slain was described as innumerable. It was not one shock, but three following each other in rapid succession at four in the afternoon, the ground rocking like waves. The affrighted people were too terror-stricken to do anything, and it was days before their senses returned to them. The shocks occurred on the 18th August, 1830. From that date to September 3rd, the shocks were continuous, and then another disturbance caused the sea to inundate the country, causing still greater loss of life. The palace of Sendai was laid in ruins in 1835, and some 400 or 500 houses swept into the sea, while in 1847 in the province of Shinano mountains were thrown down, rivers were changed, and districts flooded, the loss of life being appalling. In 1854 the provinces of Suruga, Mikawa, Totomi, Ise, Iga, Settsu and Harima as well as the whole of Shikoku were severely shaken. It was this earthquake which destroyed the town of Shinoda, in the province of Izu, which had been opened as a foreign port in Japan, while a Russian frigate the *Diana*, lying in harbour at the time was so severely damaged by the shock, and the waves which it raised, that she had to be abandoned.

The last great catastrophe, prior to the present year, was in 1855. It was about the same date occurring on November 10th. It may not be amiss to describe it a little fully, and I again quote Mr. Rein's work, from which most of these facts are gleaned. "The last great earthquake in the capital, Tokio, was that of 1855. Its horrors still live in the recollection

of the people, and they fear nothing more than a repetition of the occurrence. Altogether eighty shocks were felt within a month, the most violent of them on the night of the 10th. November. Yedo was speedily turned into a rubbish heap, and fire broke out simultaneously in thirty different places. It was as light as by day, and the black clouds of smoke covered the whole sky. Those of the inhabitants who had not previously thought of saving themselves, mostly perished under beams and ruins; others fell a prey to the flames. The survivors had taken refuge in the streets. The disturbances continued almost uninterruptedly until the 11th, November. From time to time the shocks were repeated, but were continually weaker until the end of this earthquake arrived on the 28th November. The number of fallen houses in Yedo was 14,241, of fallen warehouses 1,649. But this refers only to the town proper, not to the dwellings of the Daimio and Samurai. 104,000 persons are said to have perished. Very striking in proportion to the violence of the earthquake was its very limited area. On Nakasendo it was felt only as far as Takasaki; on Koshinkaido as far as Haehioji; on Tokaido as far as Hodogaya; Oshinkaido, as far as Utsunomiya; in Shimosa as far as Sakasai. The plain of Kwanto was the hearth and Tokio the centre of this earthquake."

In nearly all of these cases it is noteworthy that there was only one principal shock, the preceding or successive oscillations being comparatively mild. This is so frequent as to appear to be almost a fixed law, and the obvious deduction should greatly reassure the alarmed people, both foreigners and Japanese, who fear that the recent terrible shock is but the predecessor of some still more dreadful cataclysm. Up to the time of writing (Nov. 11th) the shocks have been continuous, though gradually less frequent, and less severe. We may well assume therefore, that the worst is past.

THE EARTHQUAKE.

ITS EFFECTS IN KOBE.

TERRIBLE DISASTER AT OSAKA.

On October 28th, 1891, Kobe residents were startled by the most severe shock of earthquake felt since the opening of the port. Chimneys were thrown down, houses cracked and people rushed into the streets in their night-clothes, while the dogs in their kennels howled piteously. The next morning the following account appeared in the *Hyogo News*:—

“Last night Kobe was visited by a series of earthquake shocks culminating this morning in the most severe seismic disturbance felt here for a long time. It commenced as nearly as possible at about twenty minutes to seven o'clock. My boy had just called me, when suddenly I felt the house quiver as if struck by a tremendous squall. Then followed a series of violent vibrations, seemingly travelling from northeast to southwest, causing every door and window to rattle, while the bed heaved to and fro in similar fashion to a boat rocking in a choppy sea. The furniture shook and swayed so much that the wash-basin was partially emptied of its contents, and a box was thrown from the dressing table. The sensation was a very curious one, the trembling and rocking of the house, and the motion of everything seemed like a delusion of the senses. The shocks continued for nearly two minutes, and then ceased abruptly, but afterwards, and up to the time of going to press, there were several mild repetitions.

"At No. 10, the wall of a stone godown fell down, while the chimneys at the Hongkong and Shanghai Bank, the Hyogo Hotel, and the Hotel des Colonies collapsed, doing more or less damage. On the Hill a large number of chimneys are reported to have fallen. The shop of Messrs. Thompson & Co. was wrecked, and presented a most dismal appearance. Bottles and packages had been thrown from their shelves, and, crashing through glass cases had smashed many valuable articles, besides causing confusion in the strange admixture of drugs. One case of moulded glass it will be impossible to have repaired in Japan. Probably the curio stores have suffered most. The Museum Art Co.'s store had a very large number of valuable vases thrown down and a great many pieces of valuable ware broken. But what was most curious was that more damage was not done. Large vases fell from a height of ten feet, and yet were uninjured. Others fell in the cases pell-mell on each other and had not a flaw. The loss is estimated at about \$550.

"Messrs. Ohashi estimates damages at about \$300, Messrs. Hamada a similar sum, but Messrs. Echigoya have only suffered slightly. Great loss, however, is said to be caused to owners of crockery shops throughout the town. Many of the walls in the interior of the Hyogo Hotel are very badly cracked.

"The last earthquake of anything like a similar magnitude was that of 1853. The most violent shocks to-day were experienced at 6.40, 7, 7.11, and 7.40, the one at 6.40 causing the damage."

But much more terrible news was to follow. The same issue contained the following telegrams:—

"Osaka, 28th Oct.

"Great earthquake. Two mills wrecked. Many lives lost. Concession has suffered severely.—A. N. Hansell."

Messrs. Lneas & Co. have received a telegram from Osaka as follows: "Earthquake. Dembo Mill (Naniwa) roof collapsed. Many killed."

The *Hyogo News* at once dispatched a representative to Osaka, and the paper of October 29th, contained the following narrative:—

"Our brief report of yesterday by no means conveyed an adequate idea of the extent of the damage caused by the great earthquake of yesterday morning. In Kobe, a chimney fell at the Hotel des Colonies, crashing through the verandah, while the interior of the hotel was cracked. A chimney at the Oriental Hotel also fell, while another fell through the roof of the Masonic Hall, doing very serious damage to the building. The most serious personal incident was the case of a lady on the hill, the shock producing premature confinement, and consequent death of the child. Mr. Woolley's house is very badly damaged, and numerous articles thrown about, while Mr. Lucas's residence is also injured and the walls cracked. People rushed from their houses without stopping to array themselves, and in one case a young man was seen in the centre of the settlement with only a singlet on. The shock was felt on the ships lying in the harbour, the Captain of the dismasted *Marquis of Lorne* informing us that everything on the vessel shook like an aspen leaf. He saw two small waves approaching the vessel, and the shock was coincident with these striking the vessel. He further stated that he had never previously felt a similar shaking. The passengers on the *Saikio-maru* also felt the vibrations on their way down from Yokohama.

During yesterday afternoon there were two or three mild shocks, one at 6.30, and a rather prolonged one this morning at about 3 a.m.

But, as a brief telegram in our yesterday's issue indicated, it was at Osaka where

people unaccounted for. Two or three marvellous escapes are reported. In one case a child crouched under a machine, and a rafter falling over her, she was taken out alive, while not three feet away was the mangled body of her juvenile companion. Another instance was that of a very tall young fellow who stood in the window of the third story. He was shot out amongst the falling bricks, and, although falling such a height, and amongst such a mass of bricks, tiles, and beams, with the exception of a scratch on the face, and a rent or two in the trousers escaped injury. Such an escape borders on the miraculous. The number of actual dead may be set down at 30, but the large number of serious injuries will probably largely supplement this total.

Mr. Tszuniki, the foreman of the mill, said:— Usually I am here every morning at 6 a.m., but this morning I was detained in the house later. Just before I reached the mill I felt the shaking, and saw the work-people rushing out. I looked up and saw the wall swaying, and then it came down with a crash. One of the officers was badly injured. My engineer told me that the smoke stack, 150 feet high, which you notice is badly cracked, rocked at the top fully eight feet. If it had happened at six o'clock, when the night hands go off, and the day hands come on the loss of life must have been fearful. There were 700 people in the building at the time.

Mr. Eastham, the English engineer, who has been superintending the erection of the machinery, made the following statement:—I left my house—just at the side of mill—at about 6.46, and was walking just around the building when I felt myself stagger like a drunken man. I heard a strange rumbling noise, and, turning to see what it was, I noticed the mill beginning to rock. It rocked two or three times, and then I saw the roof collapse, and the walls give

way at the third story. After the crash there was a sudden silence, a silence which could be felt. Part of the wall fell on my cook's quarters demolished them, and killing instantaneously both the cook and his wife. I went around the building, and by the time I arrived there the employés were already at the work of rescue, and they worked like demons. I should have finished my work on Friday next, and had booked my passage on the P. & O. Had I been 20 seconds later leaving the house I must have been killed.

Great injury was done to houses in the Concession, but, with the exception of the accident to the house of the Ven. Archdeacon Warren, we must refrain from giving details till to-morrow because of want of space. With the Archdeacon at the time was staying the Bishop of Exeter, and his son Bishop Bickersteth, as well as the wife and daughter of the prelate of Exon. Two chimneys were thrown down, one crashing through the roof, and utterly wrecking the drawing-room, smashing the table into splinters. Said the Archdeacon: "I was dressing at the time of the earthquake, and having before experienced shocks, did not at first run out. But hearing my daughter scream, and the others hurrying, I also ran out, as did Bishop Bickersteth. Just as we got outside the chimney fell. On returning, we found that the Bishop of Exeter and his wife had taken a stand under the arched doorway of their bedroom, his lordship deeming that the safest place. Although, of course, much alarmed, he did not exhibit much fright. Had the chimney fallen towards the line of movement, instead of with it, it must have fallen into the Bishop's bedroom. In the course of a brief conversation his lordship, who expressed himself greatly pleased with Japan, said that the shock much alarmed him, and that he considered his escape Providential. A cabinet in Miss Warren's bedroom, used as a clothes repository, was not only

thrown to the floor, but precipitated some eighteen inches into the room. One chimney is so badly damaged that it has to be carefully removed brick by brick. The Archdeacon stated that in future he would only have iron pipes and not brick chimneys."

The shock was also severely felt in Kyoto and a correspondent wrote:—

Kyoto, Oct. 28, 1891.

Sir,—The western capital is far less favoured with seismic visitations than its eastern sister. One never opens a Yokohama weekly without expecting to find the record of an earthquake. During the last five years there have been only four or five which were noticeable at Kyoto without the aid of a seismograph. The last came this morning at about 6.40, when the first shock was perceived, lasting between two and three minutes, and producing a most pronounced rocking. The timbers creaked in a way that suggested the desirability of a turn or two in the yard, before sitting down to breakfast. Outside, the ground moved sufficiently to call one's attention to the fact that the great dragon beneath was uneasy. Several chimney-eaps and some *Kabe* cornices fell at the foreign houses. Breakfast tables were generously covered with soot, and *Kabe* dust was sprinkled about promiscuously. No serious damage was done, but this was the longest and most severe (with perhaps one exception) of the shocks experienced during five years. Shortly after, two other slight shocks were felt, and during the chapel service at the Doshisha (7.30-8) three more came—the last shaking the chapel considerably and causing the 400 students to rise *en masse* and start for the exits. It was soon over, and the students immediately resumed their seats in a most orderly way, so that after a minute or two of confusion, the speaker was enabled to continue his remarks.

It was a source of no little gratification to see how reasonably this large body of young men conducted themselves.

At 10.38 there was a third shock, severe enough to start some of the students from the recitation hall. Slight shocks have continued at intervals up to the present (12 noon), as many as thirty having been noticed, if we may trust the experience of one of the students. A foreign friend had noticed ten at 8 o'clock.

Yours, &c.,

TREMOR.

Dr. Learned, of the Doshisha College, who was telegraphed to, wrote:—

“I cannot report anything very thrilling. So far as I can learn, no damage of consequence was done to buildings; only a few chimneys were injured, and the like. At Kinkozan's, a well-known porcelain store, the damage through breakage of porcelain is estimated at two thousand yen. At Nishimura's silk store it is said that seven hundred screens were damaged. A curious result in my house was the blowing out of a great quantity of soot from the chimneys into the rooms. What the force was that threw out the soot so violently, is a mystery to me.”

On October 30th, the following telegrams appeared:—

Yokohama, 29th Oct., 1891.

Earthquake felt here and at Tokyo. Duration seven minutes, the severest experienced since the founding of the Observatory. The damage done is small, but the fright was great. The smoke stack of the Electric Light Works here has been demolished, but no personal injuries sustained. Near Hamamatsu the railway is reported to have sunk several inches for the distance of a mile. Near Maizaka the line sunk one foot over a distance of five miles.

Nagoya, 29th Oct., 5.30 p.m.

Severe earthquake yesterday morning, 1,533 persons killed, and 436 injured. 5,475 houses destroyed. Conflagration at ten places, which is not yet extinguished.—*Kwanzei Nippo*.

Rumour says that the Ibukiyama of Omi was roaring some ten days since, and it has become louder from the 28th. At Ogaki 3,000 houses were destroyed and burnt, and at Gifu about seven-tenths of the whole town were either thrown over or burnt.

The deaths at Ogaki are estimated at close upon 1,000, and at Gifu at 2,000.

A telegram in the *Asahi* from Tokyo states that the fire at Nagoya has resulted in the total destruction of the city.

These indicated that the real force of the shock was felt between Tarui and Kagoya, and a correspondent was immediately sent off to traverse the whole district.

THE EARTHQUAKE.

(By the "*Hyogo News*" Special Correspondent.)

Tarui, 31st October.

We arrived at Otsu last night at about 8.30, and put up at the Minaraitai, a very comfortable hotel under a beautiful ridge overlooking Lake Biwa. Otsu scarcely felt the earthquake, only the Kencho buildings and one chimney exhibiting any traces of the shock. But the most alarming rumours were current as to catastrophe beyond Tarui. We intended at first making direct for Nagoya, by way of Yokkaichi, but learnt that Friday's shocks had upset the branch line and there was no help for it but to proceed to Tarui, and to get overland by the best means possible.

At Maibara we heard the most thrilling news of more shocks, and the frightful destruction prevailing. I immediately attempted to telegraph, but the lines were interrupted, and I therefore had only just time to despatch the note you have no doubt already received. There is little to add to the details there given. The road from here to Nagoya is so bad that the *kuruma*-men refuse to agree to take us beyond Ogaki, and we shall have to foot it. Not only so, but the houses are so demolished that the people have to camp out, and so must we. How long it will take me to do the trip I cannot estimate, but there is no communication from Nagoya, either by rail or telegraph to Yokohama or Kobe. The scenes as depicted by the Japanese must be dreadful. Only the Kencho buildings and a mission stand at Gifu,

and the intermediate villages between Ogaki and Nagoya, though around Tarni itself only thirty houses have been overthrown, resulting in the deaths of twenty-two persons. Between Otsu and here the traces of earthquake are exceedingly slight, the lovely country, which, but for the fearful catastrophe, it would have been delightful to dilate upon, looking most peaceful and exceedingly beautiful in its wealth of autumnal tints. The courteous policeman, who is deeply interested in us, states that at Nagoya the dead already total 4,000, and the houses demolished 9,000.

The train was crowded with eager passengers, many of them relatives of persons residing in the ill-fated town. All of them come provided with blankets, which we have not got, and cannot obtain, in this little village. If to-night is as cold as last, our experience will be none of the pleasantest. I have taken a little food, and we are supplementing it by obtaining eggs and chicken. From Ogaki we must walk, and hope to obtain coolies to carry our luggage. The shocks are incessant and another mountain, Tadoyama, is said to be rumbling ominously. Coming up in the train we have felt a shock, and the tremors are continuous. Whether these are merely the reaction of the principal shock, or the premonitory symptoms of an awful cataclysm we cannot pretend to predict, but the people here are almost paralysed with terror.

Beyond Ogaki the road is said to be torn up, and pierced with fissures. The wayside houses present a pitiful spectacle, lying in heaps with their dead beneath them. The horrors of Gifu probably no pen can give an adequate description of. We shall reach Ogaki about one o'clock and then tramp to Gifu, and, if possible, reach ten miles beyond, thus covering half the distance to Nagoya. If tired out, we shall have to sleep by the wayside, but we shall not adopt more of that form of roughing it than we can possibly help.

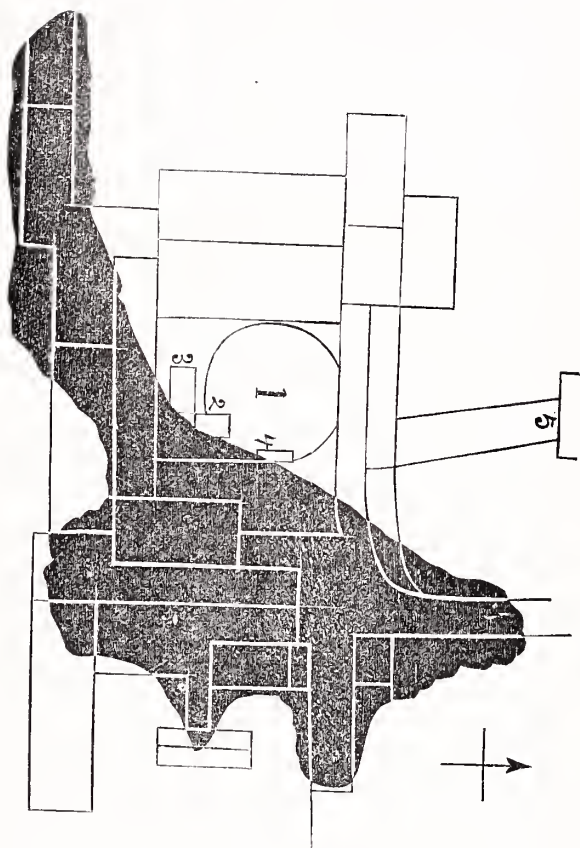
Ogaki, 31st Oct.

Leaving Tarui the road curves past a magnificent sweep of hills, wooded almost to the summit, with Ibukiyama looming up in the distance. We had not proceeded far before we discovered that the *kuruma*-men, alarmed at the earth-cracks, were taking us direct to Gifu, instead of to Ogaki. We remonstrated, and for a time they were obstinate; but finally gave way. A short ride through a charming coppice brought us on to the Ōgakikaido, and directly afterwards we passed a hamlet, where the first really disastrous effects of the earthquake were visible. Some ten or a dozen houses were demolished, in some instances the roofs having fallen bodily on the unfortunate inmates, while others were broken into fragments, many of those still standing having been shored up, and in a tottering condition. A small temple had been knocked over and lay at an angle of forty-five degrees, Nature evidently being no respecter of the Gods. The frightened survivors had constructed tents of *tatami* by the roadside, preferring the security of the ground to the instability of their rickety tenements. The next hamlet told a similar tale, and then we came to a bridge badly cracked at both sides, a long transverse fissure running through it, and some distance on the solid road beyond. A little farther a group of half a dozen houses lay prostrate, and beyond them a string of some seven or eight two-storied cottages on the left-hand side of the road, while those on the right-hand side were comparatively uninjured. Large fields of rice stood waiting the reapers, but many of the peasants are themselves felled by the Greater Reaper, and as their erstwhile

neighbours are either busy on the ruins, or too affrighted to resume their wonted avocations, the fields are deserted. Later, in the centre of the roadway we came to another deep fissure, about twenty feet long and six inches wide, the *jinrikisha*-men exhibiting great hesitancy in passing it. Parallel with the railway used to be the village of Shiota, now an indescribable mass of mud, plaster, shattered tiles, and broken beams over which we had to pick our way. Only one or two of the more solid structures remained, while the temple was in ruins. A bridge over a small stream brought us to Ogaki. The bridge was badly wrecked and half-broken, and the road leading to it deeply fissured, Ogaki was a long straggling town, consisting mainly of one winding street. We entered the western portion, and a scene of unutterable desolation presented itself. The first part was entirely desolated and in ruins. Shops of all kinds could be detected by the *débris*. Here a porcelain store, there a cabinet-makers, next a curio shop, and again an ironmongers. Over all hung a cloud of dust caused by the working of the labourers in their search for dead bodies. Now and then we saw them being taken out, some an unrecognizable battered mass of flesh, clothes, and dust; others just slightly disfigured. Farther on we came to the end of the burning portion, walking through which we were sensible of the sickening odour of burnt human flesh.

I may mention an amusing incident. Our *kuruma*-men at Ogaki demanded eighty-five cents, the proper fare was fifteen. Fortunately a policeman arrived and quickly settled the dispute by awarding twenty-five cents. He secured for me a coolie to carry

OGAKI.



1 Castle, 2 Police Station, 3 Prison, 4 Post and Telegraph Office, 5 Railway Station. The shaded portion denotes the part destroyed by fire.

my bag to Gifu, an undertaking for which the exorbitant *kuruma*-men demanded three yen.

The destitution is dreadful, and we are constantly being beseeched for assistance. There are also some heartrending stories to tell. A little girl informs us that she lost her father, mother, and sister, and was injured in the head herself. Others give records of miraculous escapes and mournful losses.

Gifu, 31st October, 1891.

We have just reached Gifu at 6 p.m., having tramped the whole distance over scenes of horror which mock description. My former letter was very brief only touching on, not detailing, the incidents which a volume could not exhaust. Ogaki used to lie on a level plain on the banks of a small river whose meandering course is marked by fertile rice fields now laden with crops. The railway runs at the northern side. Pen cannot depict the frightful devastation the town now exhibits. It is "magnificent ruin." A tributary of the Shioda-gawa intersects the town, and marks two forms of destruction, one a blackened mass of tiles with large heaps still smouldering, and emitting the pungent exhalations of human bodies slowly incinerating, the other a distorted mass of *débris* and tottering fabrics. We entered at the southern side where the earthquake alone was responsible for the damage. It was complete: fire might consume the remains, it is no exaggeration to say it could not have increased the destruction. Indeed, Ogaki felt the shock more than any other town. The houses simply collapsed wholesale, and the large number of deaths, over a thousand, according to the record which an official at the hospital kindly totalled for us, shows how sudden was the catastrophe. The number

badly injured, 637, is smaller than that of those killed, for the simple reason that those inside the houses were crushed to a jelly. In many instances the houses had fallen right across the street with the dead under them. Over these still shaking masses one could not help walking with a feeling of awe. In the spaces *avlon* the streets the survivors of the calamity *gtydni* erected little tents with portions of *shoji*, *tatami*, and other remnants. Already what could be recovered from the shops was being offered for sale, and one such erection contained many bales of cloths and drapery. A little temple on our left had been precipitated at a considerable angle, the roof still intact, the supports and interior all smashed. The granite column at the approach had been overturned, and one was leaning on a lamp stand apparently ready to fall at the slightest movement. The sluggish waters of the Shioda-gawa were choked with rubbish, the banks cracked and spilt open, and the bridges thrown about in most fantastic style.

Crossing the tiny stream or ditch, which feeds the Shioda-gawa, we came upon a scene which might well appal the stoutest heart. Over an area of some 500 yards long, by 300 yards wide, the fire fiend had raged unchecked. A gloomy mass of smoke-begrimed tiles, two or three fire-proof godowns, and a tall bamboo used at *matsuri*, were all that remained of nearly two thousand houses. Many of the people were wandering over the desolate waste, turning up the fragments in a hopeless search. But they were not depressed. They had to lie on the bare ground, they had not saved any *tatami*, only possessing what they stood upright in, but they were cheerfully at work marking out sites for new houses, with green bamboos, having little pieces of paper with cabalistic signs attached. Farther back the men working in the overturned houses were jesting as they worked, and sufficiently light-

hearted to make jokes about the appearance of the foreigners. One girl called her friend or sister, saying she had made a find. We looked rather curiously and saw a packet of toothpicks. We saw another girl turning up the woodwork, and she informed us that her mother, father, and sister were buried beneath. Prisoners were working under the superintendence of police.

Passing close to the river bank over the burnt embers, we came into view of the castle and the school, the intervening space being the place where had stood the prostitute quarter, and beyond in a grove of blistered trees the remains of the East Honganji temple. In the latter at an early hour on the fateful morning three hundred people had congregated at a special *matsuri* service in connection with the harvest. The huge edifice, which a spectator the day previous had estimated from its solidity and massive appearance would last a thousand years, had crashed down, and massacred the whole of the devoted worshippers, whose corpses were afterwards calcined by the huge conflagration. The fire originated in a dyeing works, the half-a-dozen iron crucibles still marking the spot.

Turning the corner of the castle wall, in which huge rents appeared, and where the watch towers in their dilapidated appearance betrayed signs of their transit through an ordeal compared with which the strongest shock of arms it ever had to undergo was mere play. Farther on was the school, which, although cracked and shattered, still stood well. This had been transformed into a hospital and here were brought the injured sufferers. It was a melancholy sight. A sad procession approached the gates. Women leaning on the necks of their friends, with faces battered and heads bandaged, just able to reach the enclosre. Others under the *futons* in a hastily-constructed ambulance, pale and ghastly

to look upon. Inside the moans of the injured, and the sickening spectacle of bandages and blanched faces. Inside a number of doctors with their very limited appliances and almost entire absence of lint, where one woman was just having an arm amputated at the shoulder, another having an ugly wound in the leg stitched. The official gave us the number of deaths at 1,000, and the wounded at 637. The police corps suffered severely, many of them being killed.

Here we must put in a word for the sufferers. Hunger has followed the earthquake, and the fire, and probably even yet pestilence will work dire havoc, if a seemingly imminent eruption does not demolish the whole district and every living thing upon it. But the hunger is a real and present terror, and the prompt action of the Germans cannot be too highly commended. Whatever relief is given should be immediate. Any eye-witnesses cannot fail to be moved by the piteous sight of the foodless, homeless creatures, and if written descriptions do not elicit responsive sympathy, it is because the writer's pen is incompetent to vividly pourtray the extent of the misery.

Leaving the town we next proceeded towards Gifu. We learnt that the railway and the road had both been badly served. The road was reported to be in indescribable confusion, and the railway equally knocked about. Thinking the railway of more importance, I selected the line, and walked the whole distance, some thirteen miles, while one member of the party went by the road. It was worth the walking. The towns may display the worst horrors, but that line gives the most perfect picture of the gigantic impetus of the shock anywhere obtainable. Ogaki Station simply does not exist. The ruins of it are there, but the contorted rails, twisted and curved, the collapsed soil, the ruined sheds, the destroyed water tank are all grim evidences of the earthquake's awful force.

Leaving the station we followed the track for the first four hundred yards, meeting with nothing to attract notice. At length we reached a small bridge. The rails just before nearing it were of a serpentine order. Some of the sleepers had risen, and others were depressed. The solid masonry of the structure, however, was standing uninjured, though the ground had given way on each side for a distance of about a couple of feet. From there to Gifu there were at least a hundred of these bridges, but this one was a type of all the others. The ground had given way around all of them, in some cases as much as ten or twelve feet, but, with only one exception, the masonry remained almost intact, speaking volumes for the solidity of construction and the excellent mortar used. As to the rails, we never noticed them broken in a single spot. Some places they were supporting bridges of many tons, at others were twisted, curved, and strangely distorted, but never in a single instance had they broken, though in one case the rivets had given out, and the joints parted. The men who laid that permanent way laid every part with the greatest care. The exception to the little bridge was curious. One of the walls had moved bodily around, making half a right angle with the line of its former position, while the opposite side had fallen backwards a couple of feet. The rails here were a singular sight. They curved on approaching the bridge like a figure S. Beyond it they went up and down like magnified plough ruts, and the earth beneath in places had subsided some ten or twelve feet.

The shock which thus pulled these rails so tremendously out of their natural position must have been awful, and we were quite prepared to hear a peasant tell us that it bounded up a foot or eighteen inches. Meanwhile, along both sides of the railway, evidences were painfully numerous. Hamlets and temples, solitary farm-

houses and outbuildings, had shared a common fate. In one little village of a dozen houses only one made any pretence of standing, and that was so very shaky that it was dangerous to go near it. The people were living in the bamboo groves, and the fields were deserted. From Ogaki to Nagoya, which we reached next day, travelling in and out over something like seventy more odd miles, we only counted thirty-two people at work in the fields, which had all ripened for the harvest. Between the Hiraningawa and the Nagaragawa we observed a strange fact. There was a little hamlet of some twelve or fourteen houses lying close up to the Nagaragawa's banks. The shock there had not been less severe. Indeed, as we shall see, its effects were more terrible than hitherto recorded, yet only one of those houses had fallen. This is what we considered the reason. They all had slate roofs, not tiles, but small slates, and the eaves projected only slightly beyond the walls. The house was thus light and compact, and would oscillate to a third of a right angle, and perhaps considerably more, before the centre of gravity got outside the perpendicular, causing it to lose its equilibrium. On the other hand, the massive roofs of thatch projecting for a couple of feet would easily swing outside the centre of gravity when once they rocked. But be the reason what it may, the houses stood uninjured mid ruin.

Reaching the Hiraningawa bridge, a magnificent iron structure on brick piles, we had to tread carefully over the vibrating sleepers. We could not see the rails all the way looking at the bridge from 300 yards. There were hills and valleys in the erstwhile straight line, marking the alternations of subsidence and upheaval. The bridge had stood nobly. It was an arched structure of iron, and, though the rails were twisted into curves, sleepers splintered, and rivets snapped, the bridge itself had no signs of the tremendous shaking it had under-

gone. Not so the supports. They were built of brick and close down to the river bed were lateral arches at right angles to the flow of the river. These proved the weakest spots. The first pier stood intact amidst the wreck of destruction. The second had cracked at the base of the stem just where the little arch divided the erection. The ominous red streak in the white mortar ran all round the column. The next pile was equally as harshly served, while the one nearest the opposite bank was worse treated. It had cracked and sunk, and will require rebuilding.

That embankment, built with so much care on the Hiraningawa, has been frightfully damaged. The precipitation was not so excessive as at the banks of the Nagaragawa, but they were sufficiently wide to be appalling. For a distance of thirty yards the ground had caved in and sunk fourteen or sixteen feet. One gigantic fissure ran its serpentine course for at least a hundred yards along what had been the summit of the bank, but which now lay depressed in the hollow. That fissure was in places four and five feet wide. Another big fissure ran transversely, while the ground was divided into little hillocks.

Passing clear of the bridge, an unprecedented view met our gaze. We could see as far as the Nagaragawa. It was like a tobagganning road with its devious undulations twisted far, far out of the original order of the line. Between those two bridges the earth subsided more than we had yet witnessed. Outside the bridge the sleepers and rails were suspended in mid-air about eighteen or twenty feet, and the vibration, as we picked our way over them, was rendered the more unpleasant by a distinct shock of earthquake, whose approach was heralded by that low booming sound as of distant thunder, or the reverberations of big guns miles away. The tremor made the rails rattle, and though it blanched our cheeks

—for the bravest man must quail before the awful phenomenon, and my courage is of the faintest—it did no other harm. But from that time forward those shocks were frequent, and they were always preceded by that ominous roar. Passing on we crossed a small burn spanned by a three-arched iron bridge. It had staggered at the impetus of the shock, the massive stone-work pillars had fallen back, and split, and it lay resting on the outer edge of the support, almost turned completely over, only the rails preventing it being precipitated into the quivering river bed.

That intervening space between the two rivers was the worst treated of any I had yet seen, and for the first time we noted a big tree snapped off short, though later we saw several beyond Gifu. Here the fissures defy description. Sand and mud covered the paddy fields for long distances. At one point we wished for a glass of water for we had come to Tarui at eleven, and it was now three, and we had not moistened our lips. Seeing a farmhouse on the left which had not quite collapsed, we left the railway line, and struck across a paddy field. We had not advanced far before we came across a gaping crevice whose bottom could not be discerned, and, following it, we at length came upon a small submerged tract of land, and found a mud geyser. It was about three feet six inches in height and some six feet in diameter, its formation being that of a truncated cone, with polished sides, a cup-like lip stood at the southern end, and served as an exit for the warm and brackish water emitted from it. Instinctively one shuddered. What seething masses of heated elements might be surging within a few feet of us? And the tremors were continuous.

The farmhouse was badly served, but a substantially built godown, built on a massive base of boulders, stood the strain wonderfully well,

though heavy beams had been wrenched and tiles dislodged. The frightened proprietor was exceedingly polite, though he had a woeful tale to tell of some seventeen persons slain in the adjoining hamlet by the wreckful subterranean agitations. Just at the entrance to the Nagarawa bridge we met Professor Milne. He had come along the line to pursue his scientific investigations, and had just been fruitlessly trying with a line to sound the depths of a gigantic fissure. We might cross the ruined structure he told us, but it would be dangerous. It was, but of that more anon. The approaches were appalling. Only the sterling temper of the metals made access to the bridge possible. Twenty-five feet below lay the shrunken embankment, and far up the side of the river course the collapse was immense. For fully three hundred yards a subsidence ranging from six to thirty feet deep, and varying from ten to fifty yards wide, was apparent. Cracks, crevices, cleavages, interlaced each other. The luxation had been terrific.

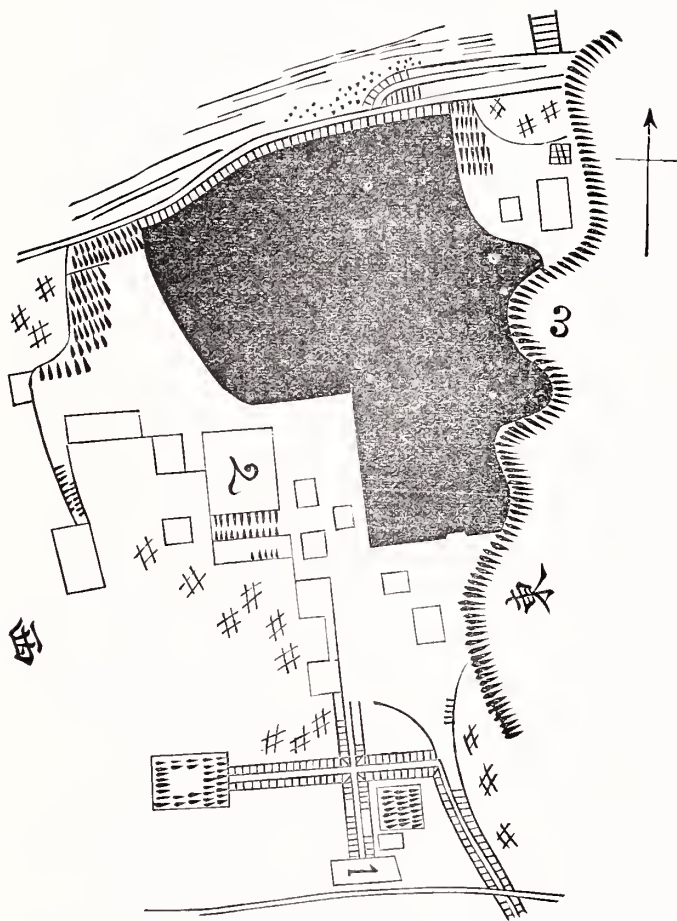
Mounting the suspended line, each step causing distinct libration, we ascended the shattered fabric, of what once had been the "strongest" bridge in Japan. It was 2,400 feet long, and consisted of eight spans each of three hundred feet, while at its highest point it must be at least 75 feet over the river-bed. About mid-way it had fallen, a sad wreck, and an impressive commentary on the helplessness of mankind in the presence of Nature's fury. Each span was supported by three stupendous columns of cast-iron filled with concrete, and some four feet in diameter at the base. The girders were all wrought iron, stoutly riveted. Yet it had so rocked as to shiver the sleepers like matchwood, and snap off stout rivets like thread. The strong pillars had snapped in the central span two into three, and one into two pieces. The fall, or the oscillation had carried

the outside girder over the inside pillar, and it lay inclined on the stump while a huge fragment of the first column protruded through the opposite side of the metals. Here again the rails had proved staunch. They were carried over the pillar one way, and twisted down the other, but remained unbroken still, though pulsating over the vacillating earth.

The effect on the other pillars was variform. Some were flawless, others cracked; and, in one case, each of the three columns were broken at the point of contact with the earth, but had not fallen, while all over the dry watercourse the ground was riven. One could not pass the place without a feeling of awe. Continuing, the sights were similar, and on crossing the Nakasendo, we could note how the made road had been disreimpt. Once we met a poor fellow whose dejected mien betokened despair. He had lost father, mother, wife, and children, and alone had escaped. A boy of ten trotted along, carrying a couple of packages. His mother he said was dead at Ogaki, he was going to Gifu to find if his father still lived.

From the crossing of the Nakasendo to the station there was nothing worthy of special note. The station was riddled as if a battery of cannon had made it a target. It was still standing, but at such an angle as to accentuate its dilapidation. Interior partitions, tables, walls, desks had been crunched up. The roof let in daylight almost everywhere, and doors had been wrenched off. Goods sheds had been thrown down, and consignments in them wrecked. A train stood in the station on the twisted rails, the only unhurt object visible. We noted the compartments, we remembered the unbroken rails along the route, and should have hailed it as a welcome resting place for the night, had not kind fates prevented. Outside the station was a waste of desolation. Tea-houses fallen, or waiting to fall, and over the western end a gloomy pall of smoke from blackened embers.

GIFU.



1 Gifu railway station, 2 Kencho, 3 Inabayama. The dark portion shows how much of the town was burnt.

A pretty little street it had been. Wide and with avenues of trees, and the town itself on the banks of a stream, lay picturesquely under the shadow of two finely-wooded tors, or pointed circular hills, whose verdure, unfortunately, has been calcined by the destructive agent which had consummated the earthquake's havoc. A station official very courteously offered to conduct us over the town, and to try and find accommodation, as well as to guide us to the house of the Rev. Mr. Chappell, whom we had been requested to inquire for. Shortly afterwards a policeman joined us and explained that we should have to sleep out, as the houses were so badly shaken, those which remained standing, and the earthquake shocks were so frequent, that instructions had been given for no persons to be admitted. This was rather a blank prospect, especially as the coolie carrying our bags, and the other members of the party had not put in an appearance.

Gifu was badly damaged, there being in all some 3,000 houses destroyed by fire and earthquake, but the loss of life had been less than at Ogaki. Indeed, it was easy to discern that Ogaki had felt a heavier blow. There the town was demolished by the earthquake, at Gifu but for the fire three-fourths of the houses would still have remained comparatively intact. All the people were camping out under mats, or any rough shelter they could find, but many of the deserted houses looked so little damaged, that, if permitted, most people would have had little fear of sleeping in them. The post-office had stood wonderfully well. It is a foreign-built building, and from the exterior exhibited few signs of the shock. But internally a ceiling had collapsed, killing two operators instantaneously.

Just glancing at the town we made for the house of the Rev. Mr. Chappell. At one time it must have been prettily situated, and its surroundings charming. Now it stands a

battered mass amidst the *débris* of neighbouring ruin. We found Mr. and Mrs. Chappell located, in a rude tent made of *shoji* and mats. There they had congregated around them several destitute Japanese who shared that little space in common by day and night. We were total strangers but were awarded a most kindly welcome. They insisted on our having a cup of tea, and, though we outwardly remonstrated, we perhaps were inwardly delighted to receive hospitality under such circumstances. For we had tramped since eleven without bite or sup, and it was now seven-thirty. Our bags, with the provender they contained, we could not ascertain the whereabouts of, and to get food, in a foodless town, was impossible. But Mr. Chappell's kindness did not cease here. He listened to our narration of the impossibility of obtaining accommodation, and insisted on the Japanese setting up for us some *shoji* and *tatami*, besides getting some *futon* so that we might rest for the night. We did so, and so well was the work performed that "camping out" was transformed from a privation to a pleasure.

Mrs. Chappell, a little nervous lady, has undergone a terrible strain, and nothing but her husband's resolution to adhere to the spot could induce her to stay another moment in the town. He says he will not desert the destitute people he may assist, a determination which we need not characterize. Mrs. Chappell at the time of the occurrence was in bed, her husband being absent at Akasaki. The *shoji* fell in on her on the one side, and the wall collapsed on the other. In great fright she rushed on to the verandah, just in time to see the house of the servants collapse. She called her boy, and on his arrival he pulled back the wall sufficiently to allow her to pass, when she escaped into the garden in her night-dress. The houses all round fell, and she had to dress in the garden. Since then she had

not taken off her clothes, having to sleep on the ground. The shock on the nerves, of a woman already overstrung can be imagined. On the arrival of the night, conflagration added to the horrors of the constant quakings, but, although coming very near, the flames left their ruined house unmolested. The house is in a state of collapse, the study ceiling having fallen through, and at any moment the whole place may come down with a run.

The Rev. Mr. Chappell was at Akasaki at the time of the disaster. He was just dressing, and had to come down from the house by clinging to the *shoji*, as it was impossible for him to walk. Looking into the street he saw a girl thrown down by the concussion.

Fatigue made us sleep soundly in spite of the constant tremors, and maugre the fact that all night long tom-toms, and cymbals were beaten and trumpets blown to keep the people on the alert in case of a further catastrophe. Just after midnight I was awakened by a tremendous booming sound, and felt the ground heaving heavily. The screams of the people, and the crash of one or two of the already damaged houses, the alarmed cries of the Japanese in Mr. Chappell's tent made one feel somewhat daunted. But the shock was of short duration, and again falling asleep, knew no more until daylight, though I was informed that some twenty distinct shocks, besides continuous vibrations, occurred.

One of the party who went by road writes:—The bridge across the Rokugawa, some 650 feet long, is not much damaged, but Mieji is in ruins entirely and only two or three houses left standing in bad condition. Honda is also the same. The Namazu Nawate, a famous embankment, is damaged by cracks. The bridge over Nagaragawa at Kodo is inclined to one side at one end, and to another side at the other end, Kodo is very badly damaged, only a few houses on the embankment remaining.

We were up early, a strong earthquake shock dispelling slumber at about 5.30. Mr. Chappell insisted on giving us another cup of tea, and then accompanied us around the town. Though the desolation was not quite so complete as at Ogaki, it was still fearful to contemplate. Out of 5,600 houses over 2,225 had been burnt, 1,916 semi-demolished, and 948 in utter ruins. The death roll totals some 250, and the number badly injured 700. Later returns I believe have considerably increased this number. We walked down towards the place of conflagration. En route, we passed the people lying in the streets, some wounded and ghastly, moaning under futons, and now and then a corpse in a litter would be borne by, having just been extricated from some ruined structure. The temple was knocked about most unmercifully. The huge granite columns 16 or 18 ft. high at the entrance, on which rested a rectangular block, were leaning at an acute angle against the lantern stand, and in imminent danger of being precipitated. A small river divides Gifu into two parts, and it was the stream which prevented the total calcination of the town. It was littered as at Ogaki with masses of debris. The little foot bridge over it was started, and terribly shaken. That tiny streak of water formed the line of division. On the left were the smouldering cinders of 2,000 homes, on the right, a shattered town partially prostrated, and partially tottering. Three godowns had withstood the flames, and although begrimed and sepia-tinted with soot, they stood alone, cracked and leaning, but standing still, and making blank desolation more prominent. Already, however, the courageous, but homeless people were at work. Shocks were continuous, but this did not prevent them working assiduously at the erection of new sheds whose frame-work was exactly identical with that of the thou-

sands overthrown. But the fumes were malodorous, and the sight of scorched bones was not one to dwell upon. We retraced our steps through the mournful little street, and having bid our worthy and considerate, though suffering host, adieu, started in *knruma* with intent to reach Nagoya. We did, but by a circuitous route. From a Government official we had heard that Mr. Iguchi, of the Seismological Department, had been sent for to visit Hakusan, the snow capped peak which towered up in the distance some 45 miles beyond. Rumour said that this valley was in a frightful state of devastation, and we were anxious for a glimpse of it though well knowing that we could not extend our investigations very far. Arriving at the railway station the officials gave dread accounts of this valley and of Takatoi-mura a small town of only a little over a thousand inhabitants, and in which, with the hamlets at hand, we were informed 700 people were killed. This we now learn is an exaggeration, the total only reaching 132, and the seriously injured to 150. We, therefore, made a detour to the north-east.

The town lies on an embankment of the upper Kisogawa. It has totally collapsed and the condition of the people we found truly deplorable. It was only on the previous night that news had reached Gifu of the disaster, the town being off the main road. The only physician had been killed and the dying and the dead—many of them—were stretched out in a little bamboo grove, without any skilled attendance. The people seemed utterly paralysed. Every house had fallen. There were none partially standing, as at Gifu and Ogaki, but all smashed into piecemeal. The ground was frightfully broken, great blocks and gaps being frequent. Trees had snapped off, and we were told the bed of the river altered.

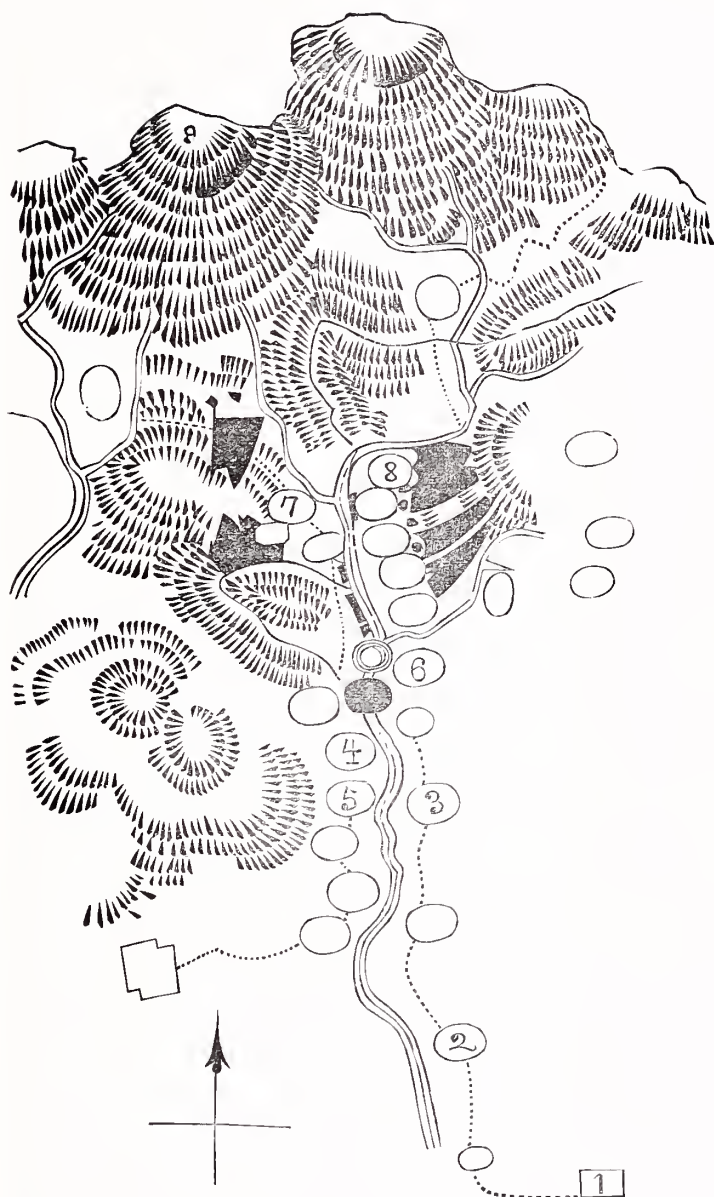
Leaving here we pushed on to Yamaguchi, which stands at the entrance to the Neodani

valley. Words hardly describe that scene of upheaval. The place is a very small one, yet 80 persons had been killed. Large fissures several feet deep, big patches of land six or eight feet square, sunk down to four or five feet, over which the kuruma had to be lifted, told the awful tale. We could look up the valley, but time would not permit of our venturing further. Of the terrific nature of the disaster, however, some idea may be gathered from the accounts we have been able to collect.

The valley follows the course of the Neogawa, and stretches 25 miles from Yamaguchi to the foot of Hakusan. In the valley altogether were 19 small villages having 1,002 houses. Of these 869 are utterly devastated, and of the remainder 101 are merely tottering while out of the scanty population 205 were killed immediately and 240 horribly maimed. The hill slopes from Takao to Nagashima, a distance of 18 miles have sunk. The acme of destruction is at Umasaka and Yadami. Here some hill sides have subsided over a hundred feet, burying houses and tress beneath them. at Midori, the Buddhist temple of Saikoji is buried in the ground, and only the top of a pagoda is visible, the ground appearing to open, and after swallowing the temple to have closed again, submerging the village as in a quicksand. Between Midori and Tarnmi, a small level plateau 2,400 yards long by 600 yards wide has sunk 90 feet, making a depression instead of an elevation. In our excursion we saw several houses which had subsided, but nothing to equal these subsidences and upheavals. Later however, after leaving Nagoya and visiting Odai-mura, we noticed an extraordinary freak which we will detail presently.

Leaving these scenes of destitution which we could not alleviate, we skirted the town and made for the Nakasendo below Gifu. Mr.

NEODANI VALLEY.



1 Gifu, 2 Yamaguchi, 3 Kanahara, 4 Takao, 5 Utsushi, 6 Itadokoro, 7 Nogo, 8 Nagashima, 9 Hakusan. The dark spots mark the area of greatest land subsidence.

Kildoyle's statement that the ground opened under his feet, and that hot water, sand and mud spurted over him, was no longer incredible. There were huge scissions in the surface, with here and there depressions full of water from a subterranean source, and over the paddy fields large tracts of sand, hitherto unknown in the districts. We had still at least twenty-five miles to reach Nagoya and the morning was advancing and so we hurried for Kano-machi, coming into the Nagoyakaido just above it. At least half a dozen trees outside this little village had been broken off, while one large fir, nearly two feet in diameter at the base, had been torn up by the roots. Prior to entering the ruined street we came across a subsidence of some four or five yards long by eight or nine feet wide and quite five feet deep. In it the inmates of the fallen tenement at the roadside had placed some mats, and an injured man lay there moaning. Processions of little ambulances, each containing a sufferer, were continually met, coming in from some stricken hamlet. Kano-machi consists of a long street winding down a considerable distance, and then turning off at right angles. Some 600 houses in all had been thrown down, twenty-five of which were burnt while a hundred and sixty bodies had already been recovered, and three hundred were injured. As in the former case, the bamboo grove had been utilised, but more effects had been saved, and although the sufferings were equally intense, the poor stricken creatures racked with pain had at least a little covering. Our kuruma men tried to get a drink, but there was no water to be had, the wells for the time having dried up, a singularity recorded also of the west portion of Gifu. Most of the roofs of the houses had been left intact where they had fallen, and the survivors had cut holes in the thatch, and many of them camped inside. We noticed one house whose roof was ingeniously

suspended from trees. It had fallen like all the rest, but the trees around had not come down, and the ingenious proprietor evidently considered the best thing to be done was to hoist the roof up by tying it to some tall trees, and then erect a new framework under it. It seemed to answer pretty well. Going to the back of the village we saw a woman's body taken from under the debris; she had an infant in her arms. Both had been killed, but there was no mutilation or trace of a wound, in either, but in other cases persons had been crushed into fragments bespattering the timbers with their life's blood, and presenting a shocking spectacle. These successive harrowing scenes became at length as harrowing as they must be painfully nauseating to our readers, and so we left the desolation and proceeded.

Our next destination was to be Kasamatsu. It once stood, where its remains now lie, under the gigantic embankment of the right bank of the Kisogawa, which here is a noble stream. About midway we left the *kuruma* and struck across to the embankment, ordered the men to proceed by road. As we came by we had noticed three houses no stronger in outward appearance than their neighbours, yet they showed hardly a crack, some local circumstance preventing them from feeling the awful blow inflicted all round. We scaled the bankside, a little beneath the fine railway bridge which spans the river. As in so many former cases there had been a shrinkage of the ground in front of the bridge, but so far as we could discover the piles were all uninjured.

Not so the bank itself. It was massively built, not merely of earth and sand, but supported by a base of rocks. How it had oscillated! In some parts it had split through, and big fragments stood isolated, awaiting only heavy rains to make the devastation signally complete. In some places it had subsided into the water to a considerable depth, and an awe-

struck peasant pointed out to us rocks which had never been seen before, and showed us how the bed had shifted. This we cannot corroborate, as never having seen the river before we could not decide. The banks however, bore unmistakable evidence of fresh inundations at some points, and the receding of the water at others.

It was not difficult to locate Kasamatsu. Situate in the centre of a smiling plain, with fields ripe unto harvest, Tadayama towering on the west, and Hakusan looming faintly to the north with a sweep of hills round to the pointed peak of Ibukiyama, it must once have been a lovely spot, the broad rushing waters of the Kisogawa with its clear depths and sandy bed, affording amusement and profitable occupation. Sailing down that meandering stream winding in and out, through coppices and mountain defiles, till it foams over the bar near Kuwana, must have been pleasant pastime in the gladsome spring days, or in the tinted autumn, while the ferry on the high way and fishing brought subsistence. Now over it hung a pall of smoke, denser than a London particular, and reeking with that never-to-be forgotten odour of cremated bodies. Ogaki, and Gifu we thought could not be surpassed, but here were deeper depths. Out of a population of 16,000, Ogaki's death-roll mustered a thousand. Here they had only 1,100 houses, and about 4,000 population. There was not a house remaining. Nine hundred were burnt or burning, and only on the outer edge stood the remaining 200 utterly demolished. Over 400 had been killed, and more than 1,000 badly injured, so that nearly half the people were prostrated. Scanty was the clothing, mats, and coverings, which those poor wounded beings had. And the sombre horror of crushed limbs! There were none, or few, at work on those ruins. That holocaust was so awful, the fumes so dreadful, that not even coolies,

indifferent as they are, dared disturb those odoriferous heaps. Language cannot paint the solemnity of that scene, imagination cannot exaggerate its terrors, it was a concatenation of death, desolation and agony.

Covering our faces with handkerchiefs to ward off if possible the gases rising from those simmering mounds, we came to the landing-stage of the ferry. The footpath was broken and disjointed, and partially subsided, so that the kuruma had to be carried down to the water's edge. There we entered the ferry, and crossed the broad expanse, of clear rolling water, bordered on the other side by a stretch of pines, encalyptus and small cedars, their foliage, autumn-tinged, forming a beautiful harmony of tones while here and there a creeper twining round an oak, showed its blood red leaves. It looked peaceful enough, and but for some yawning fissures near the dry portion of the watercourse, there was nothing to indicate the terrible cataclysm which had wrought such havoc on the opposite bank. The little toll-house seemed unshaken, and the road through the pines was as charming as only roads through Japan can be. In happier hours one would have liked to have halted, and enjoyed that fascinating view of river, hill and dale. But the enjoyment was of brief duration. Emerging from the coppice we saw the secluded, wooded hamlet of Kisogawa. Demolition here was not quite so severe, but death had been comparatively as active. Only boasting about a thousand people 84 lifeless bodies had been recovered and 200 lay awaiting death or a maimed existence. Here we noticed strong traces of what at Ichi-no-miya we were to have more terrible proofs of—the eruptions of sand and water. They told us, the people, that the columns had shot up four feet high. It was credible, for over the road was sand an inch deep, and in the interior of some of the houses were yawning fissures, and the wrecked floors

were embedded in sand, the water in one or two cases still running. Rice they told us they had none, nor food of any sort, except kake, and these fetching such fabulous prices that our kuruma men refused to invest. Nor could we get a cup of tea. We should mention however, that *en route* we had passed several Government carts laden with rice, and medical stores for Ogaki and Gifu.

Ichinomiya is the centre of four villages Umazaki, Kambe, Okuda and Okori. In these five places and the neighbourhood 957 persons were killed, and 925 badly injured, 16,658 houses being entirely demolished, and 5,748 left in a very rickety condition. In Ichinomiya alone there were 196 killed and 150 badly hurt while Okuda and Okori, smaller places, suffered even still greater fatalities. Here the action of the earthquake tended most to eruptions. Yawning chasms opened in the floors of the houses shivering the planking into splinters, and hot water, steam, mud and sand had been shot up to a height of five and six feet in some places. Exaggeration some may retort. Perhaps it is, people nearly frightened out of their wits are not the best judges of height. But that water and sand and mud had been emitted we had continual and overwhelming evidence. The effects were pretty similar in each place, but as I have trenched on my readers' patience so long, a description of Ichinomiya must be a type for the others.

'Tree enshrouded, the straggling town of Ichinomiya is divided into sections by a sacred grove, and a very fine temple. We had to clamber over the roofs of the houses in the first portion, and at other places to assist our men to get the kuruma over the riven earth. The streets were covered with sand, and going to all that was left of an *ochaya* a gaping fracture fronted us. The wrenched and shattered flooring was sand strewn, and so was a shaken remnant of the wall still standing. Out of the

clear depths water was welling slowly. Behind had been a garden perhaps a dozen yards square. It was buried two or three inches deep with a new soil, and near one end was a kind of unfinished geyser, or rough casting of one, whence the strange soil had been ejected.

Many of the wounded had been taken to the temple grounds, whither we wended our way. It was amusing to note how deference to officialdom dominated even in the midst of disaster and death. Scarcely standing even by being shored with stout beams, the little police station was a forlorn sight. But some notable was expected, and from various rubbish heaps had been extricated three chairs, two respectable and one maimed, besides a table and some carpet, and these were being placed in the wrecked room. One badly battered body was being taken out from under a huge baulk, it was mangled out of all resemblance to human shape. And the processions of the dying and the dead were continuous. We followed on to the temple through a park-like avenue of towering pines, sombre eucalyptus, and stately maples with a winding gravelled walk, by which we reached the sacred fane. At the approach the granite pillars had started, but the wooden arch stood unmoved. The temple buildings however, were many of them in a state of collapse, and great had been the destruction of rare curios. The stupendous columns had tilted, and zigzag lines of cleavage intersected the courts. Here were gathered the sick, the halt, the lame, the hungry, the homeless, and the bereaved.

Hitherto we had been unable to obtain any tea for ourselves or rice for the coolies. Luckily my bag contained some provender and we were able to give the coolies a broiled egg apiece and some bread, in grateful acknowledgment of which they brought us water in an uncracked tea-cup. As we opened our stores we were surrounded with a famished, woe-

begone crowd, who mutely watched our every mouthful and to whom the sight of our provender must have been like the luscious cooling grapes to the tortured Tantalus. We gave them what we could spare. It was little enough, and they fought each other for it with wolfish rapacity, one old woman snatching a piece from a child. We bought a few kake a pedlar had on sale, and it was pitiful to see the scramble as we distributed them. They stood close around us while we hurriedly ate our scanty meal until the familiar boom of the coming shock scattered them. for we sat under the granite archway which distinctly oscillated. There is little more to say of Ichinomiya. It is mostly in ruins, though amid a desolation of wreckage we saw four houses standing almost unshaken.

Kuroda and Kiyosu there is no need to describe. They are demolished. So also is the little village leading to Biwajima which stands on the confines of Nagoya. Indeed it was to Biwajima, the suburb of Nagoya, that the sensational news first received referred. It was partly thrown down, partly burnt, partly little injured. We passed through a street of a hundred yards without a single house betraying a sign of the ordeal they had withstood, and then we should come upon a scene of utter devastation, succeeded by a patch of blackened ruins, the grim evidence of fire supplemented by that nauseous odour of slowly simmering human flesh. But the people were all in the streets—those who were left. Sound or unsound, houses had few charms but many terrors, and they preferred discomfort to immolation. So they brought their bedding out of doors, those who had any to bring, and the others lay on mats, and boards, and anything that served to place them above the cold ground. The loss of life had amounted to 140, while at Kiyosu it had totalled 63. At Kiyosu the little station was upturned, and the line

twisted and distorted. Here in Biwajima the line runs through just before crossing the river. A big embankment approaches the bridge, and a massive masonry had spanned the street. The embankment was cracked and subsided, leaving the rails high in the air, while all the masonry of the arch had fallen, the rails alone connecting the two portions. It was a well built arch, the bricks still adhering to each other, though having dropped 20 feet. The viaduct over the river was not much injured. Here and there a rivet had started, a sleeper splintered, a rail deflected, but this was the utmost extent observable.

Not so the wooden footbridge over the river higher up, over which all traffic had to pass. The sturdy central piles had snapped or sunk on the one side, and broken midway on the other, so that one side was ten or twelve feet above the water, and the other had been precipitated into the river bed. Thus there was an angle of about 45 degrees, and kuruma passing had to be supported to prevent over-turning.

We were now in the pleasant city of Nagoya. It was fortunately not destroyed but 1,052 houses had been overthrown, and 171 killed, besides 270 injured. The stupendous castle wall on the western side had stood the shock nobly, but on the south there was a gigantic breach some twelve or fifteen yards long, from the crest of the embrasure to the bed of the moat. Heavy modern artillery firing at short range could not have been more effective. A small watch tower was dilapidated, and the commandant's quarters were riddled by falling chimneys. Otherwise, but for the people camping in the streets through fear, there was little to indicate that Nagoya had suffered, so far as we could notice in our ride to the house of the Rev. and Mrs. J. Cooper Robinson. Both received us most hospitably. Their house had not suffered much, though they had camped out one night through fright.

Mr. Robinson said: At the time of the earthquake there was a prayer meeting in the Eiwa Gakko and about thirty people were there including the Rev. Mr. and Mrs. Von Dyke, Mr. and Mrs. Klein, Mr. Mc Alpine, Miss Wimbish, Mrs. Albright and Dr. Worden. The building shook so badly that they thought it was about to fall, and all ran out the nearest way at the side. Just as they did so two huge chimneys fell on them killing a husband and wife (Japanese) instantaneously and very badly injuring their child. Two others, a man and a boy, were so much hurt that they died directly after. Mr. and Mrs. Van Dyke were buried under the *debris*, the former receiving a severe cut in the head, and Mrs. Van Dyke having her hands crushed. Mr. Van Dyke was insensible for a few moments, but on regaining consciousness he immediately set about assisting the others. Finding himself weakening he went to his house, and it was then found that his wound was a very serious one. Our preaching house suffered little or no damage. Dr. Worden's house is almost wrecked, and Mr. Mc Alpine's house is so much shaken that it will have to be re-built.

It was about 4.30 in the afternoon when we set out for Yokkaichi. We could not get a steamer and it was essential to be in Yokkaichi by the morning so we made off without delay on a thirty mile ride. Passing through Nagoya we noted that the damages were all on the western side. The normal school was wrecked by the fall of chimneys but luckily the boys were absent. The fine brick post and telegraph office in Sakai-machi was demolished, and four of the operators killed. A terrible fate overtook the convicts in the prison, ten of them being killed in their cells and others injured. The hospital of Aichi Ken is also wrecked and the six inmates had to be placed in tents built on the grounds. All through the city the people were camping out.

Passing on to Owari we came to the Cotton mill whose destruction a correspondent thus describes:—The Owari Cotton Mill, costing \$360,000, was shaken to pieces, the smoke-stack was broken off towards the top, and the tower containing elevator and water tank fell upon the main building, crashing through the roof and two floors into the basement, leaving a hole 16 ft. square in each floor to mark its descent. The mill is of brick, two stories, 750 ft. long, and 170 ft. wide. The northern end suffered comparatively little, the machinery both above and below being almost intact. But the southern half is almost a complete wreck, the three-gabled roof collapsing in such a way as to ruin most of the machinery on the second floor and part of that on the ground floor. Of the 15,800 spindles only about 5,000 are intact. The engines were not much damaged. Of the 450 workmen engaged in this mill, 35 were killed and 100 wounded.

For a long distance after leaving Owari the traces of the shock were slight, and we anticipated that we had finished the list, but more was to come. Atsuta, which we passed on the left, had 342 houses utterly destroyed, 795 semi-ruined and a death roll of 50, with 135 seriously hurt. The story was the same, wounds, outdoor camping, pitiable destitution. But from there it was not until we reached Maegasu that the story was repeated. Then almost every wayside house, every little hamlet told the thrilling tale. The sun had set when we passed the shattered bridge, but it was still light enough to see the tremendous fissures in the dyke of the Shonaigawa. A frightened inhabitant informed us that either the river bed had shifted or the ground had moved for the houses were 100 feet away from their former position compared with the stream. This statement has since been also given in the native press. They also informed us that some of the ground had been elevated with the

houses standing on it. This however, we doubt, the magnitude of the subsidence close at hand conveying only the impression that the land adjacent had risen.

From Odai-mura on for miles the ground was broken, and the wounded and destitute people sleeping or moaning by the wayside was a saddening spectacle. At one place we had to cross an embankment by the side of a stream. The embankment had subsided and the stream found a new outlet, and we had to cross in a small boat. Some places the *kuruma* had to be carried, and as all the time the tremors did not cease, our men became so alarmed at the frightful chasms and the shakings that just as we reached the Kisogawa they declined point-blank to proceed further. There was nothing for it but to obtain boats. It was a lovely star-light night, and although the air was chilly there was a tinge of romance in going down the stream with its wooded banks, and making over the bar round the point for *kuruma*. The old boatmen had strange stories to tell of rough waters without wind. The bay had become so agitated that the S.S. *Suruga-maru* had to put back to Yokkaichi the preceding day, while the S.S. *Mino-maru* expected from Yokohama had not arrived. We felt now and again a vibration of the boat, but there was nothing further of interest until we entered Kuwana. There the principal damage was two or three houses down, and some of the public buildings smashed by falling chimneys. This is the more singular as on the last occasion when an earthquake occurred in the same district the town was totally destroyed. It was early morning when we reached Yokkaichi, and we had just time for a few hours' sleep before catching the train. The town had not suffered except for some smokestacks, but it must have felt the blow for we were rudely awakened by a severe shock.

The trip from Yokkaichi to Kusatsu did not add to our earthquake experience, but if Kobe residents wish to see some of the most beautiful ravines in Japan they should walk from Seki to Tsuge, a distance of nine miles.



LETTERS FROM PROFESSOR SEKIYA.

Prof. S. Sekiya, Rigaku Hakushi, late professor of the Imperial University, and who is a high authority on Seismology, has favoured us by sending several letters on the late earthquake, since the 30th ult. As he is now sick, and can not visit the places to make scientific investigations, he has sent several letters on the subject to the native papers and his friends, and also sent copies to us. The first letter is to quiet down the people suffering from the earthquake, and he says in it that, so far as experience goes, the severest shock, which causes so much damage, is felt only once, and the smaller shocks, which are felt afterwards, are not to be feared. The second letter is addressed to business men, such as carpenters, masons, bricklayers, &c., and says that, as there is no way of preventing the earthquake beforehand, they must try to reduce its effects that is to say, they must study the relation of earthquakes and construction so as to make buildings strong to withstand any shocks. The carpenters, bricklayers, masons, plasterers, &c., who have direct relation with the subject, and have previous experience on the matter of their profession, should fully investigate the subject. The ruins of houses and other things should be kept in pictures or photographs for future references, &c. The third letter is also on earthquakes and construction. It says that Italy and Spain have construction laws for the erection of buildings which will withstand the shocks of earthquake, and goes on to say that, since the seismometer was invented in Japan, and we are now able to investigate the motions, &c., the progress of architecture in earthquake countries

can now be put on a firmer foundation. It concludes with saying that the Government should either issue a construction law, or build model buildings in Mino and Owari, and thus let the people build the houses strong enough to withstand the earthquakes.

Owing to the pressure on our space we are unable to give his letters in full. His fourth letter we will give a little more extended. It says:—

“ Since the shocks are still being felt, the people in the districts which suffered most are still frightened. As I am a Seismologist, I have sent out several letters to comfort and quiet them. What I said before, was, that history shows us that, though strong shocks are sometimes felt for several days, such cases are very rare. Generally the severe shock which causes so much damage, occurs only once, and the shocks felt afterwards are not to be feared. As I sent out the letter in a hurry, I was unable to give so full a statement, as I am going to give now. When a severe earthquake occurs, the shocks are repeated constantly for several days after, some of which may be pretty strong, and smaller shocks are generally felt for one, two, five, or six months after, and sometimes even for one or two years. The shocks become less in their power and occurrence as the time passes. Japanese history shows this, as will be seen from the table annexed to this letter; the history of other countries shows it also. So that the shocks which are occurring at present, cannot be taken as a sign of another serious earthquake. The chief cause of the earthquake is the breaking and falling of the strata of the earth, which breaks at the thinnest part of the crust. The late earthquake was, I think, caused by the breaking of the strata in Mino and Owari, which have a thinner crust than the neighbouring provinces. The smaller shocks, which we are now feeling, are caused by the smaller breakings caused by the broken parts

settling into position. The shocks will continue till the inner parts of the earth are arranged and so to say quieted, and so, according to my opinion, they will occur once or several times a day for one or two months, and will not cease till a year after. The earthquake is the most strange of natural catastrophes. At the time of great earthquake, many persons run mad by fright, and though not going so far, many become sick, or waste away their property, and some injure their health by camping out for a long time, and thus incur one evil by trying to avoid another. The professor then tabulates a list of the chief earthquakes recorded in Japan, and deduces from them the inference that only one disastrous shock is felt, the others being minor ones.



THE DEATH ROLL.

The following are the official returns of the killed and injured, and the number of houses demolished, so far as can be ascertained up to the hour of going to press. In Aichi Ken, the houses demolished number 62,091, those half demolished 36,842, and those burnt 180, and half burnt 20. The number of those killed is 2,347, and those injured 3,668.

Gifu Ken.— 8,482 houses entirely demolished.
 5,594 „ half demolished.
 5,458 „ burnt.
 3,157 injured.
 5,173 killed.

Gifu (City), area of burnt place, 158,000 tsubo.
 „ „ houses, 75,900 tsubo.

Gifu.....14,485 persons being fed by the Government.
 Ogaki ...13,935 „ „ „ „

AREA OF DISTURBANCE.

According to the report of the central Meteorological Observatory the area of the places which suffered the most severe shocks was 720 square ri, including Mino, Owari, and Echizen: of the which felt less severe shocks 2,910 square ri, including Etchu, Kaga, Shinano, Mikawa, Totomi, Iga, Ise, Omi, Wakasa, Tango, Settsu, and Yamato; of those which experienced mild shocks, 3,910 square ri, including Kozuke, Musashi, Sagami, Kai, Tajima, Inaba, Hoki, Bitchu, Mimasaka, Bizen, Harima, Awaji, Awa, Sanuki, and Kii; and of those in which slight vibrations were noticed 8,730 square ri, including Iwaki, Iwashiro, Hidachi, Shimotsuke, Echigo, Izumo, Iwami, Nagato, Bingo, Aki, Suwo, Iyo, Tosa and the provinces of Kyushu.

EARTHQUAKE FUND IN KOBE.

Directly the extent of the appalling disasters become known the *Hyogo News* opened an Earthquake Fund for the relief of the sufferers. On the same day both the Hongkong and Shanghai Bank and the New Oriental Bank Corporation, Ltd., opened lists and up to date the amount collected is as given below. The members of the German portion of the community acted with great celerity and collected over \$2,000 which they immediately dispatched for distribution in Ogaki and neighbourhood. Messrs. H. Lucas & Co. also opened a fund for the Osaka sufferers and raised \$100. We are also informed that the missionaries of Kobe and neighbouring districts started a fund which up to date has reached over \$400.

 THE HONGKONG AND SHANGHAI BANKING CORPORATION.

Hongkong and Shanghai Banking Corporation	\$100.00
F. W. Helleyer	100.00
Walsh, Hall & Co.... ..	150.00
Kobe Paper Mill Co.....	250.00
Cornes & Co.	100.00
F. S. Goodison	25.00
F. H. Gill	25.00
Jardine Matheson	300.00
Lucas & Co.	50.00
R. H. Cook	25.00
C. R. Stedman	10.00
Bertrand Shadwell	30.00
H.S.B.	100.00
Findlay Richardson	100.00
Butterfield & Swire	100.00
Samuel Samuel & Co.	100.00
J. D. Carroll	100.00
John Creagh	50.00
The American Trading Co.	100.00
W. M. Strachan & Co.	100.00
H. L. Baggallay	50.00

Carried forward...\$1,965.00

<i>Brought forward</i> ...	\$1,950.00
E. M. Delf	10.00
Smith, Baker & Co.	100.00
C. Z. Ede	5.00
P. S. Cabe du	20.00
E. S. Hitchcock	10.00
E. H. Hunter & Co.	100.00
Alf. Woolley	25.00
E. W. Noel	10.00
L. D. Abraham	10.00
P. A. Dithlefsen	10.00
Colgate Baker and Employees ...	100.00
E. J. Smithers	25.00
F. I. Goldman	10.00
R. Hughes	10.00
Geo. F. Smithers	5.00
J. C. Williams	5.00
Dodwell Carill & Co	25.00
H.M.S. "Mercury"	69.82
H. J. Carrew	20.00
F. G. Sale	25.00
D. Mackinmon	10.00
Major Perrin	10.00
J. Clifford Smith	20.00
Langfeldt & Co., Ltd.	5.00
H. Julien	5.00
W. Tallers	10.00
Grisar Dernen & Co.	25.00
E. Gofinet	10.00
J. Fox	10.00
Operatic Performance	355.00
C. J. Favre Brandt.....	100.00
S. Rosenfeldt	10.00
C. H. Wilson	15.00
F. H. Hunter	10.00
J. D. Woodford	10.00
	<hr/>
	\$3,169.82

NEW ORIENTAL BANK CORPORATION.

G. Bayfield	\$20
C. F. H.	20
C. G.	10
T. B.	5
The New Oriental Bank Corporation	50
A. S. Bremner	25
A. De Ath & Co.	100
George Grimble	5
F. H. Shephed.....	5
M. de Berigny	5
W. Fearon	5

Carried forward.....\$465

Brought forward ...\$465

Hotel des Colonies	20
A. C. Sim	15
Skipworth, Hammond & Co.	10
S. Dutronquoy.....	10
Frank Bischof	10
T. W. F.	5
W. G. P.	10
J. Steedman	20
G. Taylor	10
E. T. Jackson	5
Carroll & Co.....	20
W. Warburton.....	25
John Hall.....	10
W. Potts	10
G. J. Penney	5
G. Yanny	10
J. J. Davies	10
L. Beguex.....	5
J. Blechynden	5
F. J. Hall	5
H. E. Reynell & Co	25
J. Stewart.....	10
A. M.	25
G. S. K.....	10
J. Mackey.....	100
M. Wignall	7
M. V.....	10
E. M. Phelps	10
C. R. Cummings	10
J. A. Reynold ...	5
A. & R.	25
W. Boulton	5
M. Blummann	5
Chingtu	5

 \$722

"HYOGO NEWS" EARTHQUAKE FUND.

China and Japan Trading Co., Ltd.	\$250
N. E. Harris.....	5
Rev. J. W. McTollum	5
W. E. D.	10
E. C. Fullert	10
James Green	12
Capt. J. W. Barry	10
R. Clark	5
Iakaradzuka Mineral Water Co.....	12
N.	10
L'Abbe Chatron (Roman Catholic Mission)...	25
R. Marriage.....	10
Hyogo News Office.....	13
Kobe Institute.....	3
H. Trotzig	5

 \$385

MR. SIM was appointed to represent the Committee of the Earthquake Fund in the devastated districts and up to date has sent us the following account of his work:—

Ogaki, Nov. 8th, 1891.

Mr. Sim kindly writes:—I promised to let you know how we are getting on and below you will find a few notes of what I have done and seen to-day. You have already had sufficient accounts of the fearful disaster that has occurred in this district, and all I can say about it is—ruins in every direction, the few houses not entirely broken down are in a dangerous state and not fit to live in.

The train did not go further than Kioto last night, and it was 10 a.m. this morning when I arrived. I went to the Hospital immediately, met Dr. Berry of Kioto, who has been here with a staff of assistants and three of his trained nurses for seven days. There have been between 1000 and 1200 patients attended to, most of them have been treated and sent back to their houses, but the worst cases still remain and a great number of new ones are still coming in. Most of the cases have been dislocations, fractures, scalp wounds and internal injuries, and some of them of a severe type.

A school has been converted into a hospital and the desks with some tatami make very good beds, there are also several mat-sheds full of patients. Dr. Berry intended to go home to Kioto to-day, but received a telegram to proceed to Nagoya to treat a foreign gentleman who had been rather severely injured on the head, and he left by kuruma about 2.30; he will be here again to-morrow. He has done splendid work here.

Dr. Inoko, of the Red Cross Society, Kioto, with a staff of assistants, takes charge of the Hospital from to-day. Dr. Sato of the Imperial University, Tokio, is also here with a lot of assistants. The medical association of Kioto have

sent a liberal supply of surgical appliances and also four surgeons to co-operate with the Red Cross Society. Two of them have been on duty in the villages for the last two days, where they were much needed. The Government has also been most liberal in their supply of surgical appliances. Having spent two hours in the Hospital with Dr. Berry, seeing the number of poor creatures who had been and were being treated, I was introduced to the Guncho or Chief Magistrate of the district. Dr. B. ~~Kinley~~ *Kinley* interpreted between us. I told him on what conditions I was here to distribute relief subscribed for by the British and American residents of Kobe and elsewhere, and he has done everything he could to forward my views on the subject, which I hope will be satisfactory to the subscribers. The large centres have and are receiving great assistance from outside sources, but the more remote districts are not so well looked after. When I proposed to give special attention to them, both Dr. Berry and the Guncho thought the idea a good one, and a list of the most needy in fifty-seven villages will be supplied to me to-morrow. Without such information it would be almost impossible to get to work. There is a Government fund, which in such cases supplies rice to those who require it for ten days, but in this case a further supply for the very poor for twenty days longer has been settled upon. After that they have to look to themselves. \$2.50 will be given for the repairs of each house, and there are so many that a large sum will be required.

The weather to-day has been delightfully warm, but this will not last long, and there are so many whose houses, and all belongings were burnt, that a supply of blankets, clothing, &c., are much required. Carpenter's tools are now scarce and dear and without them they cannot go on with their work.

I now propose that a quantity of blankets be purchased, and a lot supplied to the hospital,

so that every poor patient be supplied with one to keep him or her comfortable, while they remain in such an exposed place, and to take with them when they leave for—I was going to say home, but in most cases the home is a lot of broken sticks and tiles, and where fire has been, a few red tiles only.

A depot must be formed, in some centre, for supplies of blankets, clothes, implements or money, as the cases may require. I will visit the villages and from the Kocho will receive the names of the most deserving. A ticket will be given them for certain articles or cash. This will be presented at the depot and they will be supplied accordingly.

But after I receive the report of the Guncho to-morrow and with another day's experience I will be better able to judge what is best to be done. I walked and drove through the town this afternoon and also visited many of the small villages. It is a pitiable sight.

The first scare has been got over and they are beginning to clear up the remains, lots of small shanters are erected where crowds are sleeping, as they are still afraid to trust themselves in any of the houses that remain in an upright position.

The shakes I understand were not so bad last night. Dr. Berry dined with me to-day and when he was here we had a lively turn about. Now when I am writing the table swings about now and again, just to show us the disturbance has not altogether ceased.

I have chartered a small summer-house in a garden. It is of the thinnest description and if it did fall on me it would not do much harm.

Ogaki, Nov. 9th, 1891.

SIR,—Having to wait for information from the Kencho this morning, I made up my mind to visit Gifu, ten miles from here, and all the villages on the road as well as many in more

out of the way places. The destruction is frightful, whole villages without a house standing, roads and river bank torn and rent in a most extraordinary manner. The fissures are from a few inches to four feet wide and it is astonishing how unconcerned every one goes about among them. Personally, from reading about them, I had a great horror of them, but to-day I have been jumping over them quite thoughtlessly.

I understood that Gifu was in as bad a state as Ogaki; on arriving there the first part of the town appeared badly injured, a big temple has suffered much, many out-buildings, are down and all the main buildings are much distorted. The main portion of the town was in fair order, a few houses only destroyed, and in many streets business is going on as usual, although almost every house has been slightly shaken. I have seen Gifu, Ogaki, Tatomi, Mieji, Godo, Kasamatsu, Takahana, and Takasu. The last five are entirely destroyed and the best part of Gifu is burnt.

I called at the Kencho at Gifu to see the Governor. He was out of town inspecting, but I got a lot of valuable information from another officer and returned to Ogaki. On the Governor learning I had been there, and had missed him, and not knowing whether I had gone to Nagoya or to Ogaki, he immediately dispatched an officer to both places on the chance of picking me up. One arrived here and made many apologies from the Governor for not being in when I called. Both the Governor of Gifu, and the Guncho of this place highly appreciate the kindness of the foreigners of Kobe and other places in trying to assist the distressed in their districts. I have to visit the Governor of Gifu again to-morrow. The officials of this district are sorely tried just now as there is such a lot of extra work. The information promised yesterday was only partly finished this evening, but was to be completed late to-night, and perhaps I will be

able to inform our Committee in Kobe what to purchase, and forward here to-morrow or next day. The weather is so fine that there is no particular hurry in distributing what we intend giving. Everyone worth listening to counsels a little delay before doing anything. The officials are constantly at work finding out the condition of the people, but many who left in fright, are slowly returning to the sites of their homes, and although I should like to distribute the funds for disposal quickly, am perfectly satisfied it is better to wait for a few days until arrangements are better organized.

I took with me to-day a good sum of money with the intention of giving some of it away, but the crowd requiring it was so vast, that I was seared to make a beginning. Ten to twelve miles of ruined houses, and thousands of homeless people is a big job to tackle without a system, and, with the exception of a few small coins to children and old women, I brought the cash back. Blankets and clothing are specially required and if any has a pair of old breeks, or coats or vests, which have done duty for a reasonable time, send them in to Mr. H. L. Baggallay who will forward them here. Tea, tobacco, in fact anything that would be useful to a destitute human being will be highly appreciated. This is a dreadful calamity and unfortunately many aged and well-to-do men have lost all their property, and are worse off than an ordinary coolie who is able to work and was never owner of more than a worn-out suit of clothes.

The Japanese are a wonderful people. They take even disasters, such as the present, in most philosophical manner. From their outward appearance one would think they are all out on a big picnic, but when interviewed their troubles were as keen as could be found among our own people in the old country, under similar circumstances.

The rice is all ready for cutting, but I do not see a man in the fields for miles. They are all

labouring among the ruins of their houses trying to rig up some kind of shanty to sleep in and to protect them from cold or rain,

OGAKI, Nov. 10th, 1891.

I visited Gifu to-day by request of the Governor and have got all the information required. Prince Komatsu arrived there last night on a tour of inspection of the earthquake district. He is here to-night and is evidently taking great trouble to see everything.

On my return here in the evening I have received from the Guncho a long list of the destitute people in the villages who require relief, and in company with a Kencho official, a policeman, and my interpreter I start early to-morrow to distribute the funds I have in hand. I have heard my ideas about how this should be done. Many of them are impracticable, so I go and see and use my own judgment what to do.

I am sending a list of articles, most required, to our Committee who will purchase them and forward, or bring them up. I have taken the advice of the Guncho here; he is a very good and sensible man and he says blankets, futons, carpenter's tools, &c., would be the most useful and acceptable. Most of this town and Gifu has been burnt down, and those articles destroyed. There are very few to be bought here, and those are only to be had at a high price. Many of the carpenters are entirely cleaned out, and have no money to buy such articles, and as every house for miles around must be rebuilt you can imagine how useful these articles will be.

I had a walk off the usual path to-day, and gave away some small sums. Found

what had been a house; it was all in pieces. Husband, wife and child were sitting on the ruins having a consultation as to what they were to do for the night—assets: a few broken sticks, and fifteen cents in cash, no rice or any eatables. Gave them enough to tide over a few days. On re-passing them later in the day, raining heavily, found them all huddled under a couple of doors, set up tent fashion with a piece of mat over it. In some of the hospitals to-night the rain is coming in freely through the roof, and streams of water are running over the floor where the patients are lying. Saw many remove to a drier place.

Such is the condition of thousands in this neighbourhood to-night, for I don't think there is a sound house in this part of the country. There is one comfort it is quite warm yet, but in a few days cold will set in when the misery will be severe. Since my arrival the earthquakes have not been very alarming, but this evening there have been some lively tremors.

Ogaki, Nov. 11th, 1891.

This has been my first day's real work in distributing the fund so liberally subscribed by Kobe friends. It has been very difficult for me to start, but after seeing the town last night in the heavy rain we had, the uncomfortable state of many of the patients in the hospitals, and the crowds huddled together in the shanties, I determined to begin at once. I had received a long list of the most needy cases from the Kencho, and started this morning at 8.30. My first visit was to the hospital where many of the worst cases still remain. I saw every patient. A gentleman was told off to accompany me, and one of the surgeons kindly explained and showed me

every case. The Kencho has also told off a very smart policeman to accompany me during my stay here. I write down the name, age, and occupation, number of family in house, nature of case—*very severe, severe or slight*, and the amount of money given. The interpreter and the policeman also keep an account in Japanese. The amounts given ranged from two to seven yen. After finishing the hospital we went on the outskirts of the town hunting up those who had been injured. We found lots of them with hospital bandages on—many of them had been maimed for life. The regular beggars we don't attend to but there is another class which receives attention when we find them, that is those who had been comparatively well off but are now cleaned out. The first case of the kind we saw was a doctor, a very decent looking man with a large family and a very old grandmother. He lost everything he possessed and was living in a miserable shanty outside the town. Another very bad case of this kind soon turned up. It was a most pitiable sight. An old woman 77 years of age, two very old men, and a few young people. The family had been very well off, but had lost all they possessed and felt their position very keenly.

The above are specimens of what we see all round the country. To-morrow I visit a large town six miles from here, which is out of the regular track. It is very badly injured and has many wounded. Now that we have got into it the work is not difficult, and we get through is rapidly.



ERRATA.

On page 6, lines 6, 7 and 8, read: "could not help walking with a feeling of awe. In the spaces along the streets the survivors of the calamity had"

On page 7, line 34, insert after the word "play": we reached the outer limit of the burnt area.

On page 8, line 3, read: "blanched faces were heart rending. A number of doctors," &c.

On page 38 add to Hongkong and Shanghai list: Oppenheimer Freres, \$100. The proceeds of Operatic performance totalled \$391.

